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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/020,249

12/18/2001

Yoshinobu Hotta

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12/29/2005

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EXAMINER

BALI, VIKKRAM

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/020,249

Applicant(s)

HOTTA ET AL.

Examiner

Vikram Bali

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-24 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

In response to the amendment filled on 9/12/2005, all the amendment have been entered and the action follows:

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-3, 5-7, 15, 17 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al. (U.S. Patent 6,539,118) in view of Nishiwaki (US 6535619).

Regarding Claim 1, Murray discloses the invention as detailed and describe in the prior office action dated 3/24/2005. Regarding the newly added limitations the separating an image of the character string into images of individual characters,

Nishiwaki teaches a method of character recognition that includes a inputting a image of the character sting and segmenting the character string in to the individual character in order to recognize them (see figure 2, S11, S21, figure 10, col. 3, lines 57-62) as claimed. It would have been obvious to one ordinary skilled in the art at the time of invention to combine the two references as they are analogous because they are from the same field of classification 382/228 and 382/229 for character reorganization. The teaching of the Nishiwaki of single character recognition can be included in to the Murray system's of characters reorganization in order to come up with a word recognition apparatus that accelerate the processing speed (see col. 3, lines 40-43) for motivation.

Regarding Claim 2, Murray discloses the invention as detailed and describe in the prior office action dated 3/24/2005.

Claim 3, Nishiwaki further teaches the apparatus according to Claim 1, wherein when a key word extracted from the image of the character string, and when only a part character forming key word extracted, extraction condition as character for preceding and subsequent characters is mitigated, and a character is re-extracted (see col. 3, lines 57-65).

Regarding Claim 5, Nishiwaki discloses the apparatus according to Claim 1, wherein during extraction of the key word from the image of the character string, when a partial character string includes at least two separate characters in the key characters, and... portion of the key word, (see Figure 7; numerical 501).

Regarding Claim 6 and 7 the arguments analogous to those presented for claim 5 rejection is applied to claim 6 and 7.

With regards to Claims 15, 17 and 24, arguments analogous to those presented for Claim 1 are applicable to Claims 15, 17 and 24.

4. Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al., hereinafter Murray, (U.S. Patent 6,539,118) in view of Nishiwaki (US 6535619) and in further view of Jamali (U.S. Patent 6,269,188).

Regarding Claim 8, Murray and Nishiwaki does not explicitly disclose further limitations recited in this claim.

Jamali, in the same field of endeavor, discloses a system for word grouping accuracy value generation, wherein when a word is extracted using ... similar word (Figures 5b and 5c; Column 9, Lines 11-40).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Murray's and Nishiwaki's invention according to the teachings of Jamali to implement further limitations recited in Claim 9, because it will enhance key word recognition and increase the accuracy of string recognition system.

Regarding Claim 10, Murray Nishiwaki does not explicitly disclose further limitations recited in this claim.

Jamali, in the same field of endeavor, discloses a system for word grouping accuracy value generation, wherein an identifiable character ... string category (Figures 5b and 5c; Column 9, Lines 11-40).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Murray's and Nishiwaki's invention according to the teachings of Jamali to implement further limitations recited in Claim 10, because it will enhance key word recognition and increase the accuracy of string recognition system.

5. Claims 9, 11, 16, 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al., hereinafter Murray, (U.S. Patent 6,539,118) in view of Nishiwaki (US 6535619) and in further view of Matsubayashi et al., hereinafter, Matsubayashi (U.S. 6,473,754).

Regarding Claim 9, Murray and Nishiwaki does not explicitly disclose further limitations recited in this claim.

Matsubayashi, in the same field of endeavor, discloses a system for extracting character strings, wherein when the code string ... the key words (Figures 5-8; Column 9, Lines 27-67).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Murray's and Nishiwaki's invention according to the teachings of Matsubayashi to implement further limitations recited in Claim 9, because it will expedite key character recognition process by considering character strings occurring with higher probability.

Regarding Claim 11, Matsubayashi further discloses a system for extracting key words, wherein when a word area is holistically recognized, said recognition unit performs a word recognizing process, segments a character for the area, and

recognizes the character so that a word recognition result can be determined when a character contained in the word recognition result contained as an higher order and has number of occurrences equal to or larger than threshold in the character recognition result (Figure 23; Column 27, Lines 60-67, Column 24, Lines 1-22).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Murray's and Nishiwaki's invention according to the teachings of Matsubayashi to implement further limitations recited in Claim 9, because it will increase the accuracy of the recognition system.

With regards to Claims 16 and 20-22, arguments analogous to those presented for claims 1 and 9 are applicable to Claims 16 and 20-22.

6. Claims 12-14, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al., hereinafter Murray, (U.S. Patent 6,539,118) in view of Nishiwaki (US 6535619) and in further view of Mao et al., hereinafter Mao, (U.S. Patent 6,327,386).

Regarding Claim 12, arguments analogous to those presented for Claim 1 are applicable to claim 12 concerning holistically recognizing and verification of the word area.

Murray and Nishiwaki does not explicitly disclose further limitations recited in this claim.

Mao, in the same field of endeavor, discloses a key character extraction system, wherein:

said recognition unit holistically recognizes word area based on a word feature generated by combining character features;

said verification unit computes a division position of each character in a word matching template, compares line density of a word image obtained at each division position with line density held by each character a recognized word, and rejects a word recognition result when a sum of the line density, or difference in a collation ratio is larger than a threshold (Figures 5-9; Column 8, Lines 34-67, Column 9, Column 10, Lines 1-25).

Regarding claim 13, Mao further discloses said verification computes a division position of each character in a word image from a matching template, compares peripheral distribution of a word image obtained at each division position with peripheral distribution held by each character of a recognized word, and rejects word recognition result when sum of the peripheral distribution, or a difference in a collation ratio is larger than a threshold (Figures 5-9; Column 8, Lines 34-67, Column 9, Column 10, Lines 1-25).

Regarding Claim 14, Mao further discloses said verification unit compares a number of characters estimated from a word image, and rejects a word recognition result when difference in the number of characters is larger than a threshold \*Figure 10B; Column 12, Lines 32-67, Column 13, Lines 1-67).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Murray's and Nishiwaki's invention according to the



Art Unit: 2623

teachings of Mao to implement further limitations recited in Claims 12-14, because it will increase the accuracy of the recognition system.

With regards to Claims 18 and 19, arguments analogous to those presented for Claims 1, 12 and 13 are applicable to Claims 18 and 19.

7. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al. (U.S. Patent 6,539,118) in view of Nishiwaki (US 6535619) and in further in view of Jamali (U.S. Patent 6,269,188) and Matsubayashi et al. (U.S. 6,473,754).

With regards to Claim 23, arguments analogous to those presented for claims 1, 9 and 10 are applicable to Claim 23.

#### ***Allowable Subject Matter***

8. Claims 4 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vikkram Bali whose telephone number is 571.272.7415. The examiner can normally be reached on 7:00 AM - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571.272.7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2623

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Vikkram Bali  
Primary Examiner  
Art Unit 2623



vb  
December 22, 2005